



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/551,774

10/03/2005

Ian Robert Wheeler

117-673

4722

23117 7590 06/16/2010  
NIXON & VANDERHYE, PC  
901 NORTH GLEBE ROAD, 11TH FLOOR  
ARLINGTON, VA 22203

EXAMINER

PARVINI, PEGAH

ART UNIT

PAPER NUMBER

1793

MAIL DATE

DELIVERY MODE

06/16/2010

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/551,774	<b>Applicant(s)</b> WHEELER ET AL.	
	<b>Examiner</b> PEGAH PARVINI	<b>Art Unit</b> 1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 30 October 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1,3-6,10-14 and 17-32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-6,10,12-14,17,21-28 and 32 is/are rejected.
- 7) ☒ Claim(s) 11,18-20 and 29-31 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)         | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicants' submission filed on October 30, 2009 has been entered.

### ***Response to Amendment***

This Office Action is in reply to the amendment/remarks filed on October 30, 2009. After entry of this amendment, claims 1, 3-6, 10-14, 17-32 are currently pending in this application.

### ***Claim Objections***

**Claim 11** is objected to because of the following informalities: there appears to be some missing commas and some extra "or" in the recitation of said claim; it is suggested to modify said claim as follows: "Processing according to claim 10, wherein the metal flakes are treated with a phosphate, silica, alumina, ammonium dichromate, or ammonium or potassium permanganate." Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

Art Unit: 1793

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

**Claims 13-14, 24, and 28** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 13 and 14 do not recite proper Markush group. See MPEP 803.02. Therefore, it is recommended to amend claim 13 at the end of line 1 to recite “selected from the group consisting of” to overcome this 112-second paragraph rejection. Also, it is recommended to amend claim 14, at the end of line 1 to recite “selected from the group consisting of”.

Claim 28 recites the limitation "the metal pigment paste or granules" in line 1 of the recitation of said claim. There is insufficient antecedent basis for this limitation in the claim. Furthermore, it is not clear as to what binders the “surface coating binders” refer to.

Claim 24 provides for the use of a non-aqueous, non-hydrocarbon milling fluid, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

Claim 24 is rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 1, 3-5, 10, 12, 17, 21-23, 25, 28, and 32** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 3,790,407 to Merten et al.

Regarding claim 1, Merten et al. mixing magnetic metallic powders with a suitable solvent and a lubricant such as stearic acid (i.e. heteroatom-containing compound), and then milling them in a steel ball mill (column 3, lines 43-48). It is to be noted that ball mill is a mechanical milling. Further, it is to be noted that stearic acid is not aqueous and non-hydrocarbon (there exists oxygen in addition to hydrogen and carbon in its structure). Additionally, stearic acid is considered water miscible since it is polar. As for stearic acid being a solvent, it is to be noted that said limitation is considered met specially in view of the fact that depending on what material is being

Art Unit: 1793

dissolved in stearic acid, it can be considered a solvent. Furthermore, since the instant claims do not recite solvent in what compound/component, stearic acid is considered solvent.

Regarding claim 3, Merten et al. disclose stearic acid as a lubricant; therefore, the limitation of claim 3 is considered to have been met.

Regarding claim 4, Merten et al. clearly disclose that when milling has proceeded to a desired point, the process is stopped and the mill sludge is screened by a fine mesh sieve to eliminate larger particles and agglomerates (column 3, lines 53-56); therefore, the reference clearly suggest removing oversize particles.

Regarding claim 5, Merten et al. disclose that after sieving the slurry, a filter cake is formed having about 80% to 90% by weight of flakes (column 3, lines 59-64).

Regarding claim 10, since Merten et al. disclose that lubricant is adsorbed on the flakes which is done after milling; therefore, said adsorbance can be considered a treatment of flakes absence evidence proving the contrary.

Regarding claim 12, Merten et al. disclose mixing the filter cake or paste with binder vehicle, and curing it (column 4, lines 55-60). Said curing is taken to read on the limitation of thermal treatment absence evidence showing the contrary.

Regarding claim 17, Merten et al. disclose the use of iron as the metal to be milled (column 3, lines 26-29).

Regarding claim 21, since the instant claim 3 recites "lubricant and/or corrosion inhibitor", the fact that Merten et al. meet the limitation of claim 3 by disclosing lubricant is seen to read on the limitation of claim 21 since the existence of corrosion inhibitor is optional based on the recitation of instant claim 3.

Regarding claim 22, Merten et al. disclose that in addition to stearic acid, other lubricants may be used such as petroleum lubricants (i.e. mineral oil) (column 5, lines 55-57).

Regarding claim 23, Merten et al. clearly disclose ball milling the metal (column 3, line 47).

Regarding claim 25, Merten et al. disclose obtaining a paste or filter cake after milling (column 3, lines 59-64; column 4, lines 3-4).

Regarding claim 28, Merten et al. disclose mixing and dispersing the paste of metal flakes obtained in the milling process in a binder vehicle (column 3, lines 3-5)

Art Unit: 1793

which is coated on a substrate (i.e. surface coating) (column 2, lines 52-58; column 6, lines 10-21).

**Claims 6 and 26-27** are rejected under 35 U.S.C. 103(a) as being unpatentable over Merten et al. as applied to claim 1 above, and further in view of U.S. Patent No. 6,680,070 to Howarth et al.

Merten et al. disclose milling magnetic flakes in milling fluid such as stearic acid, then filtering it and forming a filter cake or paste.

The reference does not expressly and/literally disclose forming granules from said paste or filter cake.

However, it would have been obvious to a person of ordinary skill in the art to have formed pellets or granules of said filter cake or paste motivated by the fact that granules or pellets have the advantage of easy transportation, and as it is evidenced from Howarth et al., it is well known to form any sort of powder of a wide variety of different products into tablets, granules, or prills (column 1, lines 47-52).

Thus, in view of the above, it would be within the scope of a skilled artisan to have formed the filter cake or paste into granules.

It is to be noted that Howarth et al. is merely relied upon because of its express disclosure on the fact that forming any powder to granules or tablets is well known.



**Claim 32** is rejected under 35 U.S.C. 103(a) as being unpatentable over Merten et al. as applied to claim 1 above, and further in view of U.S. Patent No. 4,007,138 to Kanig.

Merten et al. disclose the use of stearic acid as the compound used in milling (i.e. milling fluid). The reference may not expressly and/or literally disclose that stearic acid is a low volatility milling fluid.

However, it would have been obvious to a person of ordinary skill in the art to have considered stearic acid as a compound having low volatility as that evidenced by Kanig et al. which clearly disclose stearic acid as a solvent of low volatility (column 5, lines 30-37).

It should be noted that Kanig has, merely, been used for its disclosure on stearic acid having low volatility.

### ***Response to Arguments***

Applicants' arguments with respect to claims 1, 3-6, 10, 12-14, 17, 21, 23-28 and 32 have been considered but are moot in view of the new ground(s) of rejection.

### ***Allowable Subject Matter***

**Claims 11, 18-20, and 29-31** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Art Unit: 1793

The following is a statement of reasons for the indication of allowable subject matter: The prior art do not disclose or suggest a metal such as aluminum, zinc, copper, tin, nickel, silver, gold or an alloy of them being milled in a mechanical milling process to form flakes of such metals in a way that a milling fluid which is non-aqueous, non-hydrocarbon is used which the milling fluid is both solvent and water miscible and that the milling fluid may be a heteroatom-containing compound. Furthermore, the prior art do not disclose such a metal having particle size of 6-600 $\mu$ m and that the obtained metal flakes being treated with a phosphate silica or alumina, ammonium dichromate or ammonium or potassium permanganate.

**Claims 13-14** would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: The prior art do not disclose or suggest any of the specific compounds recited in instant claim 13 used as a milling fluid in a mechanical milling of metal powder.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PEGAH PARVINI whose telephone number is (571)272-2639. The examiner can normally be reached on Monday to Friday 8:00am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo can be reached on 571-272-1233. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1793

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Pegah Parvini/  
Examiner, Art Unit 1793

/Anthony J Green/  
Primary Examiner, Art Unit 1793